15.0 Salt Lake City, Utah, Disposal Site

15.1 Compliance Summary

The Salt Lake City, Utah, Disposal Site, inspected on April 2, 2007, was in good condition. The disposal cell, its cover materials, and associated surface water drainage features were in excellent condition. Removal of surface soil with historically elevated concentrations of Ra^{226} was performed along the property boundary on the east and west sides of the site by EnergySolutions, the adjacent radioactive waste disposal operator. Several radiological waste items found on site from EnergySolutions waste disposal operations were surveyed and determined to be uncontaminated. All surface radiological survey measurements taken on site during the inspection were below DOE Radiation Control (RadCon) Manual limits, indicating that spillover and windblown contamination from the adjacent EnergySolutions radioactive waste disposal operations is currently not an issue.

The Utah Division of Radiation Control (DRC) notified DOE on June 7, 2007, that EnergySolutions had implemented their Emergency Response Plan to address a breach of a restricted area containment berm that resulted in approximately 500 gallons of potentially contaminated non-contact stormwater to flow onto the site. DOE was informed that the ponded stormwater reported background levels of radiation. As part of their Emergency Response Plan, EnergySolutions fortified the berm with clay and pumped all ponded stormwater on DOE's property to their evaporation ponds. No erosion or damage to the site occurred.

Other than the remediation and emergency response actions performed by EnergySolutions, DOE performed no site maintenance, and there was no cause for a follow-up or contingency inspection identified.

15.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Salt Lake City, Utah, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site are specified in the *Long-Term Surveillance Plan* [LTSP] *for the South Clive Disposal Site, Clive, Utah* (DOE/AL/62350−228, Rev. 2, U.S. Department of Energy [DOE], Albuquerque Operations Office, September 1997) and in procedures established by DOE to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). These requirements are listed in Table 15–1.

Table 15–1. License Requirements for the Salt Lake City, Utah, Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 3.0	Section 15.3.1
Follow-up or Contingency Inspections	Section 3.4	Section 15.3.2
Routine Maintenance and Repairs	Section 5.0	Section 15.3.3
Groundwater Monitoring	Section 4.0	Section 15.3.4
Corrective Action	Section 6.0	Section 15.3.5

Institutional Controls—The 100-acre disposal site is owned by the United States of America and was accepted under the U.S. Nuclear Regulatory Commission general license (10 CFR 40.27) in 1997. DOE is the licensee and, in accordance with the requirements for

UMTRCA Title I sites, is responsible for the custody and long-term care of the site. Institutional controls at the disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property, a site perimeter fence, warning/no trespassing signs placed along the perimeter fence, and a locked gate at the entrance to the site. Inspectors found no evidence that these institutional controls were ineffective or violated.

15.3 Compliance Review

15.3.1 Annual Inspection and Report

The site, located 85 miles west of Salt Lake City, Utah, was inspected on April 2, 2007. Results of the inspection are described below. Features and photograph locations (PL) mentioned in this report are shown on Figure 15–1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

15.3.1.1 Specific Site Surveillance Features

Access Road, Fences, Gates, and Signs—Access to the Salt Lake City, Utah, Disposal Site is attained by following paved and graded roads from the interstate highway (I–80) exit at Clive, Utah, west of Salt Lake City, to the EnergySolutions facility located approximately two miles south of the interstate. All traffic entering the EnergySolutions facility is stopped at a security gate approximately 0.25 mile west of the DOE disposal site. Inspectors pass through this gate and must then sign in with EnergySolution's security guard in a building near the northwest corner of the disposal cell.

DOE has a perpetual easement across EnergySolutions property, but no longer has direct access to the northwest entrance of the site because of the relocation of an active waste haul road.
15A Access to the site is now along a route to the southwest corner of the property. Due to EnergySolution's ongoing radioactive waste disposal activities on the surrounding property (PL–1), the adjacent haul roads currently used to access the southwest corner of the DOE site are designated as restricted areas (radiological control areas) and controlled by EnergySolutions. After being briefed by EnergySolutions health and safety personnel on the radiological hazards and controls in place for crossing these restricted areas, inspectors sign a radiological work permit and are issued dosimeters. EnergySolutions personnel then escort the inspectors to the site and accompany them during the inspection.

A chain-link security fence owned and maintained by EnergySolutions is located on the site property boundary on the east, west, and south sides. A second chain-link security fence, owned and maintained by DOE, that surrounds the disposal cell, lies within the EnergySolutions fence on the east, west, and south sides. On the north side is a single chain-link security fence located on the property boundary that is maintained by DOE. EnergySolutions has an additional fence bordering their haul roads directly north and west of the site. All fences were in good condition.

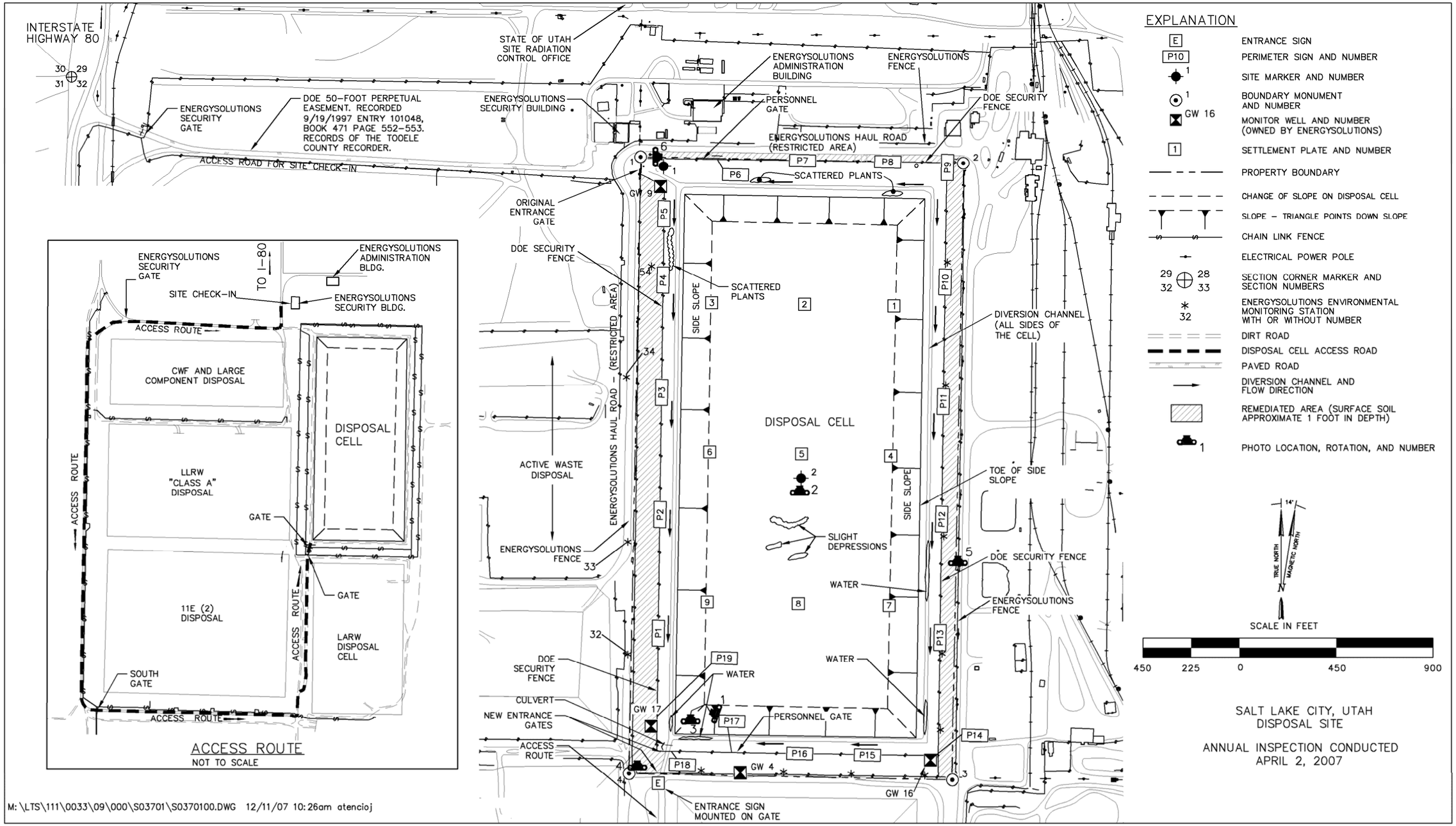


Figure 15–1. 2007 Annual Compliance Drawing for the Salt Lake City, Utah, Disposal Site

EnergySolutions installed new entrance gates through their fence and DOE's fence at the southwest corner of the site in 2002 to provide site access. The DOE entrance gate was locked and in excellent condition. The former entrance gate at the northwest corner of the site was also locked and in good condition.

The entrance sign, located on the current entrance gate, was in excellent condition. All perimeter signs were present and in good condition.

Site Markers and Monuments—Two granite site markers are placed at the site, one located at the site entrance in the northwest corner and one located on the disposal cell top (PL–2); both were in excellent condition. Four boundary monuments are located on the property, one in each corner; all were in good condition.

Monitor Wells—Four groundwater monitor wells are present on the site. In 2000, DOE transferred ownership of these wells to EnergySolutions because, in accordance with the LTSP, groundwater monitoring is not required at this site (see Section 15.3.4). EnergySolutions plans to
15B decommission these four wells. DOE drafted a license agreement that was signed by each party in June 2006 that grants access onto DOE property for well abandonment. None of the wells had been decommissioned at the time of the 2007 inspection, but all were properly secured.

15.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into three areas referred to as transects: (1) the top and side slopes of the disposal cell; (2) the area between the disposal cell and the site boundary; and (3) the outlying area.

The area inside each transect was inspected by walking a series of traverses. Within each transect, the inspectors examined specific site surveillance features, drainage structures, vegetation, and other features. Inspectors also looked for evidence of settlement, erosion, or other modifying processes that might affect site integrity or the long-term performance of the site.

Top and Side Slopes of the Disposal Cell—The top and side slopes of the disposal cell are armored with riprap and were in excellent condition (PL–3). Three very slight depressions were noted on the cell top in 2006 that had not been noticed in prior inspections. These slight depressions are likely from the initial construction of the cell and not from post-construction settling. Water does not appear to be ponding and DOE will continue to monitor the area. Inspectors found no evidence of settling, slumping, or instability on the top and side slopes of the disposal cell. No deep-rooted plants were found growing on the disposal cell cover.

Area Between the Disposal Cell and the Site Boundary—The area between the toe of the disposal cell and the site boundary was inspected. Water from recent precipitation was present in the diversion channels in the southwest corner and on the southeast side of the cell; these features had not fully drained because of the flat terrain. All disposal cell storm water diversion channels were in good condition. Minor plant encroachment has occurred in portions of the diversion channels, however these plants do not reduce the capacity of the channels.

In 2006, a radiological contamination area in the southwest corner of the site and adjacent to an EnergySolutions waste-haul road was excavated and backfilled, but remained posted. In 2007, the area was found de-posted.

In December 2006, EnergySolutions notified DOE that they had removed surface soil (~1 ft in depth) in the area between the property boundary and DOE's interior disposal cell security fence along the entire length of the east and west property boundaries. The post-closure survey performed by the Utah DRC in 1989 reported concentrations of Ra^{226} remaining in surface soil in these areas in excess of the 5 pCi/g limit EnergySolutions is required to maintain on their property. The post-closure survey reported Ra^{226} concentrations up to 27 pCi/g. Because of
15C concerns DOE expressed over the potential for spillover contamination on to the disposal site from EnergySolutions operations, removal of this surface soil was performed in order to enable determination as to whether spillover was occurring in the future. The Ra^{226} concentrations reported in the post-closure survey report are believed to have been a remnant of the initial construction of the DOE disposal cell, because EnergySolutions active radioactive waste disposal operations had not yet begun. EnergySolutions disposed of the surface soil removed and placed clean fill material in the remediated areas and graded the surface (PL–4) at no cost to DOE. All surface radiological survey measurements taken within the remediated areas were below DOE RadCon Manual limits for posting a contamination area.

15D The Utah DRC notified DOE on June 7, 2007, that EnergySolutions implemented their Emergency Response Plan to address a breach of a restricted area containment berm west of their low-level radioactive waste (LLRW) container pad. Approximately 500 gallons of potentially contaminated non-contact stormwater flowed onto the site, into the buffer area on the east side of the site between the disposal cell security fence and the EnergySolutions fence that defines the property boundary. On June 13, 2007, DOE was informed that gamma spectroscopy analysis of samples collected from the ponded stormwater on DOE's property reported background levels of radiation. It was also reported that the restricted area non-contact stormwater had flowed into an estimated 84,000-gallon pool of stormwater (approximately 25 ft wide by 450 ft long by 1 ft deep) located on DOE's property that was the result of a significant precipitation event. As part of their Emergency Response Plan, EnergySolutions fortified the berm with clay and pumped all ponded stormwater on DOE's property to their evaporation ponds. No erosion or damage to the site occurred; photographs were provided by EnergySolutions for documentation (PL–5), along with a copy of the follow-up correspondence to the Utah DRC.

Cursory scanning for spillover and windblown contamination was performed on site during the
15E inspection to determine if cross-contamination was occurring from the surrounding active low-level radioactive waste disposal operations being conducted by EnergySolutions. Several radiological waste items found on site from EnergySolutions waste disposal operations were surveyed and determined to be uncontaminated; EnergySolutions immediately removed all of the items from the site. Scanning was also performed because posted radiological contamination areas were previously found both on DOE's property and directly adjacent to DOE's property on the north side. All surface contamination scanning measurements taken during the inspection were below DOE RadCon Manual limits, indicating spillover and windblown radiological contamination is not currently an issue onsite. Periodic scanning will be performed during future site inspections.

Outlying Area—This transect extends from the site property boundary to 0.25 mile beyond the site boundary. EnergySolutions performs active low-level radioactive waste operations that surround the DOE property. East of the site incoming wastes are unloaded from rail cars and transferred to haul trucks. To the west is an active Class A low-level radioactive waste disposal cell and a large component waste disposal facility. Directly south is a completed low-level radioactive waste disposal cell. To the southwest is a disposal cell containing 11e(2) regulated low-level radioactive waste material. A mixed-waste treatment and disposal facility is operated southeast of the site. Access to all areas surrounding DOE's property is restricted due to radiological hazards.

In 2005, on the north side of the site between the DOE property boundary (defined by the chain-link security fence) and the EnergySolutions restricted area waste haul road fence, several locations were found during the inspection to have been excavated approximately one foot and posted as radioactive materials contamination areas. The contamination resulted from activity performed on the EnergySolutions waste haul road adjacent to the site. EnergySolutions removed the contaminated surface soil in these areas and installed matting on the waste haul road fence to help reduce future contamination. In 2006, these areas had not been back-filled or de-posted; the barrier ropes and warning signs were observed lying on the ground. In 2007, it was observed that EnergySolutions had remediated the entire length of the area between the fences (from east to west) directly north of the property to a depth of approximately two feet; radiological postings remained at the time of the inspection (PL–6). Surface radiological survey measurements were taken on DOE's property just inside the perimeter fence adjacent to this remediated area. All measurements were below DOE RadCon Manual limits for posting a contamination area.

15.3.2 Follow-Up or Contingency Inspections

DOE will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition, or (2) DOE is notified by a citizen or outside agency that conditions at the site are substantially changed.

No follow-up or contingency inspections were required in 2007.

15.3.3 Routine Maintenance and Repairs

No routine maintenance or repairs were made at the site in 2007.

15.3.4 Groundwater Monitoring

The groundwater under the site was determined to be of limited use because of excessive total dissolved solids concentrations in the uppermost aquifer. Consequently, the LTSP does not require groundwater monitoring.

15.3.5 Corrective Action

Corrective action is taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

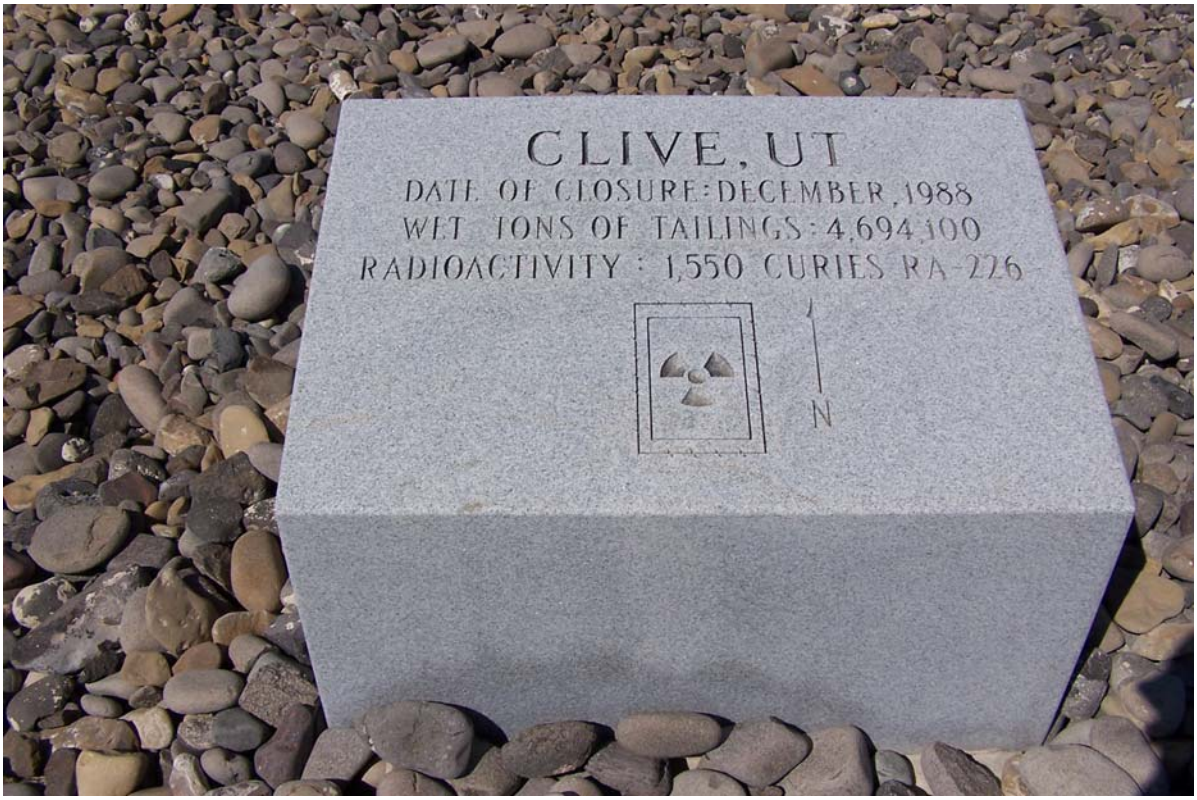
No corrective action was required in 2007.

15.3.6 Photographs

Table 15–2. Photographs Taken at the Salt Lake City, Utah, Disposal Site

Photograph Location Number	Azimuth	Description
PL−1	290	EnergySolutions active waste disposal operations directly west of the site.
PL−2	360	Site marker SMK–2.
PL−3	360	View north showing the crest of the west side slope and top of the disposal cell.
PL−4	360	Area between the property boundary and the security fence along the west side of the site.
PL−5	350	Standing water in the buffer area between the disposal cell security fence and the property boundary on the east side of the site.
PL−6	90	Remediated area directly north of the site property boundary between the site security fence and EnergySolutions' waste haul road fence.

SLC 4/2007. PL–1. EnergySolutions active waste disposal operations directly west of the site.



SLC 4/2007. PL–2. Site marker SMK–2.

SLC 4/2007. PL–3. View north showing the crest of the west side slope and top of the disposal cell.

SLC 4/2007. PL–4. Area between the property boundary and the security fence along the west side of the site.

SLC 4/2007. PL–5. Standing water in the buffer area between the disposal cell security fence and the property boundary on the east side of the site.

SLC 4/2007. PL–6. Remediated area directly north of the site property boundary between the site security fence and EnergySolutions' waste haul road fence.

End of current section.